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Form 10-306  
(Oct. 1972)

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY - NOMINATION FORM  
FOR FEDERAL PROPERTIES

(Type all entries - complete applicable sections)

STATE:
California
COUNTY:
Inyo
FOR NPS USE ONLY
ENTRY DATE
DEC 31 1974

1. NAME

COMMON:
Harmony Borax Works (H.S.-2)
AND/OR HISTORIC:

2. LOCATION

STREET AND NUMBER:			
Death Valley National Monument			
CITY OR TOWN:		CONGRESSIONAL DISTRICT:	
Death Valley		33	
STATE:	CODE	COUNTY:	CODE
California	06	Inyo	027

3. CLASSIFICATION

CATEGORY (Check One)	OWNERSHIP	STATUS	ACCESSIBLE TO THE PUBLIC
<input checked="" type="checkbox"/> District <input type="checkbox"/> Site <input type="checkbox"/> Object	<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Both	Public Acquisition: <input type="checkbox"/> In Process <input type="checkbox"/> Being Considered	<input type="checkbox"/> Occupied <input checked="" type="checkbox"/> Unoccupied <input type="checkbox"/> Preservation work in progress
PRESENT USE (Check One or More as Appropriate)			
<input type="checkbox"/> Agricultural <input checked="" type="checkbox"/> Commercial <input type="checkbox"/> Educational <input type="checkbox"/> Entertainment	<input type="checkbox"/> Government <input checked="" type="checkbox"/> Industrial <input type="checkbox"/> Military <input type="checkbox"/> Museum	<input checked="" type="checkbox"/> Park <input type="checkbox"/> Private Residence <input type="checkbox"/> Religious <input type="checkbox"/> Scientific	<input type="checkbox"/> Comments <input type="checkbox"/> No

4. AGENCY

National Park Service		STREET AND NUMBER:	
REGIONAL HEADQUARTERS: (If applicable)		Box	
Western Regional Office		450 Golden Gate Ave., 36063	
CITY OR TOWN:	STATE:	CITY OR TOWN:	STATE:
San Francisco	California	San Francisco	California

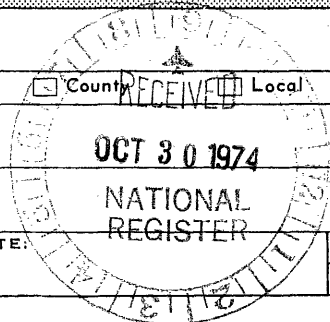
5. LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC:			
Death Valley National Monument			
STREET AND NUMBER:			
CITY OR TOWN:		STATE:	
Death Valley		California	

6. REPRESENTATION IN EXISTING SURVEYS

TITLE OF SURVEY:			
DATE OF SURVEY:			
<input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> County <input type="checkbox"/> Local			
DEPOSITORY FOR SURVEY RECORDS:			
STREET AND NUMBER:			
CITY OR TOWN:		STATE:	
		California	

SEE INSTRUCTIONS



STATE:	California
COUNTY:	San Francisco
ENTRY NUMBER	DEC 31 1974
DATE	

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## 7. DESCRIPTION

CONDITION

(Check One)

☐ Excellent☐ Good☐ Fair☐ Deteriorated☒ Ruins☐ Unexposed

(Check One)

☐ Altered☒ Unaltered

(Check One)

☐ Moved☒ Original Site

DESCRIBE THE PRESENT AND ORIGINAL (if known) PHYSICAL APPEARANCE

**Level of Treatment - preservation**

This borax works originally consisted of a plant, a barn-like storage building, and several adobe buildings  $\frac{1}{2}$  mile from the plant that served, apparently, to house and board the workers. The plant was composed of a water reservoir system (including pipes that lead from Texas Spring about three miles away), boiler, furnace, tanks to dissolve raw borax, ore cars and tracks, and a large number of cooling vats where the dissolved borax was crystallized. The site was laced with wagon roads.

Today the housing area has but part of the walls of two adobe structures, while the plant retains part of the furnace and boiler, the dissolving tanks, an adobe walled structure adjacent to the boiler, and wooden framed supports for some of the other now-disappeared parts of the plant.

Boundary: From the junction of the Harmony Borax site access road with the main valley highway, proceed north along the valley highway 1500 feet. Then go due west 2800 feet, thence south 2100 feet, and then due east 3000 feet back to the main valley highway. From that point proceed north along the highway to the junction of the access road (the starting point).

Class VI land - 185 acres

Cost - \$9,000



SEE INSTRUCTIONS

## 8. SIGNIFICANCE

PERIOD (Check One or More as Appropriate)

- |  |                                       |  |                                       |
|--|---------------------------------------|--|---------------------------------------|
| <input type="checkbox"/> Pre-Columbian | <input type="checkbox"/> 16th Century | <input type="checkbox"/> 18th Century            | <input type="checkbox"/> 20th Century |
| <input type="checkbox"/> 15th Century  | <input type="checkbox"/> 17th Century | <input checked="" type="checkbox"/> 19th Century |                                       |

SPECIFIC DATE(S) (If Applicable and Known) 1883-1888

AREAS OF SIGNIFICANCE (Check One or More as Appropriate)

- |  |   |  |  |
|--|---|--|--|
| <input type="checkbox"/> Aboriginal          | <input type="checkbox"/> Education              | <input type="checkbox"/> Political                 | <input type="checkbox"/> Urban Planning        |
| <input type="checkbox"/> Prehistoric         | <input type="checkbox"/> Engineering            | <input type="checkbox"/> Religion/Philosophy       | <input type="checkbox"/> Other (Specify) _____ |
| <input type="checkbox"/> Historic            | <input checked="" type="checkbox"/> Industry    | <input type="checkbox"/> Science                   | _____  |
| <input type="checkbox"/> Agriculture         | <input type="checkbox"/> Invention              | <input type="checkbox"/> Sculpture                 | _____  |
| <input type="checkbox"/> Architecture        | <input type="checkbox"/> Landscape Architecture | <input type="checkbox"/> Social/Humanitarian       | _____  |
| <input type="checkbox"/> Art                 | <input type="checkbox"/> Literature             | <input type="checkbox"/> Theater                   | _____  |
| <input checked="" type="checkbox"/> Commerce | <input type="checkbox"/> Military               | <input checked="" type="checkbox"/> Transportation | _____  |
| <input type="checkbox"/> Communications      | <input type="checkbox"/> Music                  |  |  |
| <input type="checkbox"/> Conservation        |   |  |  |

STATEMENT OF SIGNIFICANCE

### 1st Order

Harmony Borax Works had a longer life than Eagle Borax Works to the north. Borax was found in its vicinity in 1881, and W.T. Coleman, a prominent San Francisco businessman, set up a borax plant and began producing in late 1883 or early 1884. During summer months, when the weather was so hot that the processing water in the crystallizing vats would not cool down enough to permit the suspended borax to crystallize, Coleman had the works at Harmony wrapped with some sort of cloth so that water could be played on them to assist in lowering the temperature. Coleman had earlier set up the works at Amargosa where his laborers were able to work later into summer, near present day Tecopa, California.

At Harmony, situated at the mouth of Furnace Creek, the gathering of the cottonball was done principally by the Chinese laborers who shoveled the raw ore from the surface to the ground and used sleds, push carts, and wagons to transport the borate to the processing plant. Local Indians and some whites gathered mesquite, and possibly other desert plants to be used as fuel for the furnace that heated the water that dissolved the raw product.

The crystallized borax was sacked and loaded into wagons for transportation to Mojave. At first the borax was hauled by contract teamsters using ordinary wagons and employed eight to 12 horses. Coleman felt that it would be cheaper for the borax works to do its own hauling and he instructed J.W.S. Perry, a trained druggist and the timekeeper at his borax office in Mojave, to devise wagons and lay out a route to get the borax to the railhead. Perry collected information about west coast wagons used to haul heavy loads and devised a wagon that could carry 10 tons. J.T. Delameter of Mojave assembled 10 wagons costing \$900, and for five years of constant use no wagon broke down.

The bringing into being of the twenty-mule team is fraught with vagueness and contradictory evidence. One popular account is that the Superintendent of the Amargosa works noticed that one of the young teamsters, Ed Stiles, was hauling twice as much with his twelve mules as a fellow driver pulled with his 8-mule team. In contemplating this peculiar fact

SEE INSTRUCTIONS

# 9. MAJOR BIBLIOGRAPHICAL REFERENCES

F. R. Holland and Robert Simmonds, "Historic Structures Report, Eagle and Harmony Borax Works," National Park Service (HHA-WSC), 1971.

Benjamin Levy, "Death Valley National Monument, Historic Background Study," National Park Service, Division of History, April 1969.

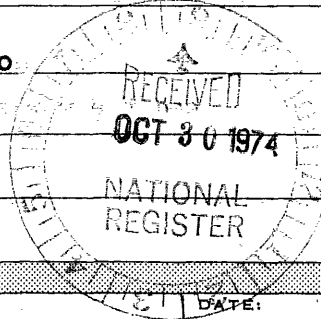
# 10. GEOGRAPHICAL DATA

LATITUDE AND LONGITUDE COORDINATES DEFINING A RECTANGLE LOCATING THE PROPERTY			O R	LATITUDE AND LONGITUDE COORDINATES DEFINING THE CENTER POINT OF A PROPERTY OF LESS THAN TEN ACRES		
CORNER	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	
	Degrees Minutes Seconds	Degrees Minutes Seconds		Degrees Minutes Seconds	Degrees Minutes Seconds	
NW	116° 52' 46"	35° 29' 02"				
NE	116° 52' 06"	35° 29' 02"				
SE	116° 52' 06"	35° 29' 29"				
SW	116° 52' 46"	35° 29' 29"				

APPROXIMATE ACREAGE OF NOMINATED PROPERTY: **185 acres**

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE:	CODE	COUNTY:	CODE
<b>California</b>	<b>06</b>	<b>Inyo</b>	<b>027</b>
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE
STATE:	CODE	COUNTY:	CODE



NO UTM  
HL

SEE INSTRUCTIONS

# 11. FORM PREPARED BY

NAME AND TITLE: **F.R. Holland, Jr., Historian** DATE: **June, 1971**

BUSINESS ADDRESS: **HHA-WSC, National Park Service**

STREET AND NUMBER: **450 Golden Gate Ave.,** PHONE:

CITY OR TOWN: **San Francisco,** STATE: **California** CODE: **06**

# 12. CERTIFICATION OF NOMINATION

# NATIONAL REGISTER VERIFICATION

State Liaison Officer recommendation:

- ☒ Yes  
☐ No  
☐ None

*[Signature]*  
 State Liaison Officer Signature

In compliance with Executive Order 11593, I hereby nominate this property to the National Register, certifying that the State Liaison Officer has been allowed 90 days in which to present the nomination to the State Review Board and to evaluate its significance. The recommended level of significance is ☒ National ☐ State

☐ Local

*[Signature]*  
 Federal Representative Signature

**4/10/74**  
 Date

**ACT. REG. DIR.**  
 Title

I hereby certify that this property is included in the National Register.

*[Signature]*  
 Director, Office of Archeology and Historic Preservation

Date **DEC 31 1974**

ATTEST:

*[Signature]*  
 Keeper of The National Register

Date **DEC 31 1974**

NATIONAL REGISTER OF HISTORIC PLACES  
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STATE	California
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8. Statement of Significance (cont.)

the Superintendent wondered how much could be hauled if two teams were put together. Accordingly, Stiles stretched out his team and then hooked up the eight additional mules in front of them. He then attached the other wagon to his own and added a water wagon, thus bringing into being the traditional 20-mule team and its paraphernalia. The recitations apparently are based on the reminiscences of Ed Stiles who gave out interviews in the 1930s. He drove these 20-mule teams for 2½ years, carrying borax from both Amargosa and Harmony to the railhead.

Later research casts a cloud over this generally accepted story - that the 20-mule team was not used at Coleman's Death Valley borax works, but rather an 18-mule team.

The 18-mule team stretched out in front of the huge freight wagons nearly 100 feet. A single line called a jerk line, ran from the high lead mule down the left side of the team to the driver who sometimes rode on the wagon and other times on the left mule nearest the wagon, depending upon personal preference. The driver sent his signals down this line to the lead mule. To assist him in getting his message to the mules he had a whip to crack over their heads and a box containing pebbles which he used to pepper out-of-reach recalcitrant mules.

The 30 tons of equipment and product rolled down Death Valley across the Devils Golf Course, up the grade to Wingate Pass and down the other side to Mojave.

Of all the visions Death Valley conjures up in the popular mind none stands out more vividly than the making of borax and the hauling of it by the 20-mule team. The slogan "20-mule team" was created by Stephen T. Mather when he was in charge of sales promotion for the Pacific Coast Borax Co., after the demise of the borax plant at Harmony. The borax industry thrives today, larger than ever with its advertising symbol still the 20-mule team. Later Mather became the founder and the first director of the National Park Service.

Harmony went out of operation in 1888 when Coleman's financial empire collapsed. Acquired by Frank M. "Borax" Smith, the plant never resumed the boiling of cottonballs, and in time became part of the borax reserves of Pacific Coast Borax Company and its successors.

Harmony Borax Works was not the first such plant, in the world, in the United States, or, for that matter, in Death Valley, but in an indirect way it was the birth place of the 20-mule team symbol, and moreover, it was a good example of a typical marsh borax operation. Furthermore, it is today a collection of the best preserved remains of a borax operation within the National Park Service.